

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT), and those sources are limited to the emission limits and other conditions specified in that table.
2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the MAERT. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

Federal Applicability

3. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):
 - A. Subpart A, General Provisions.
 - B. Subpart Ja, Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.
 - C. Subpart GGG, Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983, and on or Before November 7, 2006.
 - D. Subpart GGGa, Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006.
 - E. Subpart QQQ, VOC Emissions from Petroleum Refinery Wastewater Systems.
4. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61:
 - A. Subpart A, General Provisions.
 - B. Subpart FF, Benzene Waste Operations.
5. These facilities shall comply with all applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:
 - A. Subpart A, General Provisions.
 - B. Subpart CC, Hazardous Air Pollutants from Petroleum Refineries.
 - C. Subpart UUU, Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units.
 - D. Subpart DDDDD, Hazardous Air Pollutants for Industrial for Institutional, Commercial, and Industrial Boilers and Process Heaters.

6. The following requirements shall apply to the crude charge heaters (EPN 28-H3 and EPN 28-H4) and the CCR Charge and Interheaters (EPN 88-H1):

- A. Except where provided otherwise in Paragraph E of this Special Condition, emissions of NO_x, CO, and NH₃ from each heater shall not exceed the following values.

Pollutant	Emission Limit	Averaging Period
NO _x	0.0150 lb/MMBtu	365-Day Rolling
NH ₃	10 ppmvd	365-Day Rolling
CO	50 ppmvd	365-Day Rolling

- B. The limits above do not apply during the initial shakedown period, which is not to exceed 180 days after initial startup.

- C. Compliance with the NO_x and CO emission limits of paragraph A shall be demonstrated through use of a continuous emission monitoring system (CEMS).

- D. The NH₃ concentration in the exhaust stack shall be tested or calculated according to one of the methods listed below and shall be tested or calculated according to frequency listed below. Testing for NH₃ slip is only required on days when the SCR unit is in operation.

- (1) Install, calibrate, maintain, and operate, as specified under Special Condition No.13, a CEMS to measure and record the concentration of NH₃. The NH₃ concentration shall be corrected and reported in accordance with paragraph A.
- (2) Use a sorbent or stain tube device specific for NH₃ measurement in the 5 to 10 parts per million (ppm) range. The frequency of sorbent/stain tube testing shall be performed daily for the first 60 days of operation, after which the frequency may be reduced to weekly testing if operating procedures have been developed to prevent excess amounts of NH₃ from being introduced in the SCR units and when operation of the SCR units have been proven successful with regard to controlling NH₃ slip. Daily sorbent or stain tube testing shall resume when the catalyst is within 30 days of its useful life expectancy. These results shall be recorded and used to determine compliance with this Special Condition.

If sorbent or stain tube testing indicates an NH₃ slip concentration which exceed 5 ppm at any time, the permit holder shall begin NH₃ testing by either the Phenol-Nitroprusside Method, the Indophenol Method, or the EPA Conditional Test Method (CTM) 27 on a quarterly basis, in addition to the weekly sorbent or stain tube testing. The quarterly testing shall continue until such time as the SCR unit catalyst is replaced; or if the quarterly testing indicates NH₃ slip is 4 ppm or less, the Nitroprusside/Indophenol/CTM 27 tests may be suspended until sorbent or stain tube testing again indicate 5 ppm NH₃ slip or greater. These results shall be recorded and used to determine compliance with this Special Condition.

- (3) Install, calibrate, maintain, and operate, as specified under Special Condition No. 13, a second NO_x CEMS upstream of the control device (in addition to the NO_x CEMS required under Special Condition No. 13. Perform the measurements and calculations associated with the mass balance method specified in 30 TAC § 117.8130(1), using NO_x CEMS data to determine the NO_x concentration differential across the control device.
- (4) Install and operate a dual stream system of NO_x CEMS at the exit of the SCR. One of the exhaust streams would be routed, in an unconverted state, to one NO_x CEMS and the other exhaust stream would be routed through a NH₃ converter to convert NH₃ to

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 3

NO_x and then to a second NO_x CEMS. The NH₃ slip concentration shall be calculated according to the method specified in 30 TAC § 117.8130(2). These results shall be recorded and used to determine compliance with this Special Condition.

- (5) Any other method used for measuring NH₃ slip shall require prior approval from the TCEQ Regional Director.
- E. During non-routine operations for a heater, the requirements of Special Condition 6.A shall not apply. Records of heater startup, shutdown, and low firing events shall specify the time and duration of the event.
- F. The heaters shall be fired with either sweet natural gas and/or refinery fuel gas containing no more than 0.10 grain total sulfur expressed as hydrogen sulfide (H₂S) per dry standard cubic feet (dscf) (equivalent to 162 ppmv) on a rolling three-hour basis and no more than 60 ppmv on a rolling 365-day basis.

CCR Vent Scrubber

- 7. The following requirements shall apply to the CCR Vent Scrubber (EPN 88-V1):
 - A. The CCR Vent Scrubber (EPN 88-V1) shall be designed to control hydrogen chloride (HCl) emissions to an outlet concentration of 10 ppmvd at 3% O₂ or an overall control efficiency of 99 percent, whichever is less stringent.
 - B. The minimum liquid flow to the absorber shall be 222 gpm. The circulation rate shall be monitored and recorded at least once an hour. After the initial stack test, the circulation rate shall be maintained at not less than the value recorded during the performance test.

The flow monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

Quality assured (or valid) data must be generated when the CCR Vent Scrubber is operating except during the performance of a daily zero check. Loss of valid data due to periods of monitor breakdown, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in hours) that the CCR Vent Scrubber operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

- C. The scrubbing solution shall be maintained at or above a pH of 7.5. After the initial stack test, the pH shall be maintained at not less than the value recorded during the performance test. The pH shall be continuously analyzed and recorded at least once a minute. Each monitoring device shall be cleaned with an automatic cleaning system, or cleaned weekly using hydraulic, chemical, or mechanical cleaning. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least weekly, whichever is more frequent, and shall be accurate to within ± 0.5 pH unit.

Quality assured (or valid) data must be generated when the CCR Vent Scrubber is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in hours) that the CCR Vent Scrubber operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded.

Carbon Adsorption

8. The CCR sump shall vent through a carbon adsorption system (CAS) consisting of at least two activated carbon canisters that are connected in series.
 - A. The CAS (EPN F-SUMPCCR) shall be sampled daily to determine breakthrough of volatile organic compounds (VOC). The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done while wastewater is being routed to the CCR sump.
 - B. The VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), or a TCEQ-approved alternative detector. The instrument/FID must meet all requirements specified in Section 8.1 of EPA Method 21 (40 CFR 60, Appendix A). Sampling and analysis for VOC breakthrough shall be performed as follows:
 - (1) Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain less than 0.1 ppmv total hydrocarbons. Span calibration gas shall be methane or isobutylene at a concentration within ± 10 percent of 100 ppmv, and certified by the manufacturer to be ± 2 percent accurate. Calibration error for the zero and span calibration gas checks must be less than ± 5 percent of the span calibration gas value before sampling may be conducted. As an alternative, other VOC species may be used as a span calibration gas if Method 21 is followed and the appropriate calibration correction factor is used.
 - (2) The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sample ports or connections must be designed such that air leakage into the sample port does not occur during sampling.
 - (3) During sampling, data recording shall not begin until after two times the instrument response time. The VOC concentration shall be monitored for at least 5 minutes, recording 1-minute averages, while wastewater is being routed to the CCR sump.
 - C. Breakthrough shall be defined as the highest 1 minute average measured VOC concentration at or exceeding 100 ppmv. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within 24 hours of the detected breakthrough. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.
 - D. Records of the CAS monitoring maintained at the plant site, shall include (but are not limited to) the following:
 - (1) Sample time and date.
 - (2) Monitoring results (ppmv).
 - (3) Corrective action taken including the time and date of that action.
 - E. Alternate monitoring or sampling requirements that are equivalent or better may be approved by the TCEQ Regional Manager. Alternate requirements must be approved in writing before they can be used for compliance purposes.

Piping, Valves, Connectors, Pumps, Agitators, and Compressors – 28VHP

9. The following requirements apply to piping, valves, connectors, pumps, agitators, and compressors containing or in contact with fluids that could reasonably be expected to contain greater than or equal to 10 weight percent volatile organic compounds (VOC) at any time.

- A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

- piping and instrumentation diagram (PID);
 - a written or electronic database or electronic file;
 - color coding;
 - a form of weatherproof identification; or
 - designation of exempted process unit boundaries.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Paragraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 6

install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

- (1) a cap, blind flange, plug, or second valve must be installed on the line or valve;
or
- (2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once within the 72-hour period following the creation of the open-ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. If a relief valve is equipped with rupture disc, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

- G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 7

- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days and a record of the attempt shall be maintained.
- I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shut down as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I) or 500 pounds, whichever is greater, the TCEQ Regional Manager and any local programs shall be notified and the TCEQ Executive Director may require early unit shut down or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.
- J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.
- K. Alternative monitoring frequency schedules of 30 TAC 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F and G of this condition.
- L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

Piping, Valves, Pumps, and Compressors in Contact with Ammonia – 28AVO

- 10. Piping, valves, pumps, and compressors in NH₃ service – Audio, olfactory, and visual checks for NH₃ leaks within the NH₃ handling system for the SCR Units represented in the initial permit application dated April 3, 2020

Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment:

- A. Audio, olfactory, and visual checks for leaks within the operating area shall be made once per shift.

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 8

- B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take at least one of the following actions:
- (1) Isolate the leak.
 - (2) Commence repair or replacement of the leaking component.
 - (3) Use a leak collection/containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.

Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the Texas Commission on Environmental Quality (TCEQ) upon request.

Continuous Demonstration of Compliance

11. The permit holder shall install and operate a fuel flow meter to measure the gas fuel usage for each device listed in Special Condition No. 13. The monitored data shall be reduced to an hourly average flow rate at least once each day, using a minimum of four equally-spaced data points from each one-hour period. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5 percent. In lieu of monitoring fuel flow, the permit holder may monitor stack exhaust flow using the flow monitoring specifications of 40 CFR Part 60, Appendix B, Performance Specification 6 or 40 CFR Part 75, Appendix A.
12. The permit holder shall install and operate an analyzer which continuously monitors the heat content of fuel supplied to each heater. For sources which receive fuel from a common fuel gas header, a single analyzer may be installed in the fuel gas header.
13. The permit holder shall install, calibrate, and maintain a continuous emission monitoring system (CEMS) as follows for equipment covered by this permit. Methods specified in Special Condition No. 6 may be used as alternatives to installation of an NH₃ CEMS.

EPN	Source Name	CEMS required for pollutant (indicated by X)			
		O ₂	CO	NO _x	NH ₃
28-H3	Crude Charge Heater No. 1	X	X	X	See SC 6D
28-H4	Crude Charge Heater No. 2	X	X	X	See SC 6D
88-H1	CCR Charge and Interheaters	X	X	X	See SC 6D

14. Each CEMS required under this permit shall satisfy the following requirements
 - A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.
 - B. Subparagraph (1) below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; section 2 applies to all other sources:
 - (1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative

accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, Section 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager.

- (2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of +15 percent accuracy indicate that the CEMS is out of control.

- C. The monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of ppmvd, lb/MMBtu, and/or lb/hr, as applicable at least once every week as follows:
 - (1) The measured 1-hr average concentration (in units of ppmvd) from the CEMS shall be converted to a dry basis and corrected to the reference oxygen concentration.
 - (2) The converted concentration, corrected for oxygen, shall be converted to an emissions factor (in units of lb/MMBtu) by using an appropriate F-factor determined as specified in EPA Method 19, Equation 19-13, determined using the measured hydrogen content of the fuel gas.
 - (3) The emission rate (in units of lb/hr) shall be determined by multiplying the emission factor by the fuel flow rate and fuel heat content measured as required under Special Condition Nos. 11 and 12.
 - (4) In case the permit holder elects to monitor stack exhaust flow as provided for in Special Condition No. 11, the emission rate (in units of lb/hr) shall be determined by multiplying the measured concentration (converted and corrected as needed) by the exhaust flow rate; and the emission factor (in units of lb/MMBtu) shall be determined by dividing the emission rate by the monitored fuel flow rate, using fuel flow rate and fuel heat content data measured as required under Special Condition Nos. 11 and 12.
- D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing. If a temporary CEMS replacement analyzer is used in-place of a permanent non-redundant CEMS analyzer, the 30-day notification requirement is waived for the temporary CEMS and reinstallation of the rebuilt CEMS (in the case of a rebuild of an existing CEMS), and notification shall be made as soon as practicable. The temporary CEMS analyzer shall meet the applicable requirements of the permanent non-redundant CEMS analyzer which it replaced and shall use the same probe and interface.

Quality-assured (or valid) data must be generated when the source generating emissions is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the source generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

Initial Determination of Compliance

15. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Crude Charge Heater No. 1 (EPN 28-H3), Crude Charge Heater No. 2 (EPN 28-H4), and the CCR Charge and Interheaters (EPN 88-H1) to demonstrate compliance with the MAERT and Special Condition No. 6. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual and the EPA Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:
 - (1) Proposed date for pretest meeting.
 - (2) Date sampling will occur.
 - (3) Name of firm conducting sampling.
 - (4) Type of sampling equipment to be used.
 - (5) Method or procedure to be used in sampling.
 - (6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.
 - (7) Procedure/parameters to be used to determine worst case emissions.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from the Crude Charge Heater No. 1 (EPN 28-H3), Crude Charge Heater No. 2 (EPN 28-H4), and the CCR Charge and Interheaters (EPN 88-H1) to demonstrate compliance with the MAERT and Special Condition No. 6 to be tested for include (but are not limited to) CO, NO_x, SO₂, and NH₃.
- C. Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after initial start-up of the facilities (or increase in production, as appropriate) and at such other times (identify the need for any periodic sampling here) as may be required

by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

- D. The facility being sampled shall operate at the maximum operating rate during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if the operating rate is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

- E. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.

One copy to each local air pollution control program.

- F. Sampling ports and platform(s) shall be incorporated into the design of (source stack and EPN) according to the specifications set forth in the attachment entitled "Chapter 2, Guidelines for Stack Sampling Facilities" of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.

Maintenance, Startup, and Shutdown

16. This permit authorizes the emissions for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

Additionally, this permit authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, and control devices identified in Special Condition No. 22 and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the plant. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 12

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

- A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;
- B. the type of planned MSS activity and the reason for the planned activity;
- C. the common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;
- D. the date and time of the MSS activity and its duration;
- E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis.

17. Process units and facilities, with the exception of those identified in Special Condition Nos. 19, 20, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.

- A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.
- B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.
- C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel or closed liquid recovery system unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.
- D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 13

maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

The following requirements do not apply to fugitive components, pumps, compressors and vessels with fixed bed catalysts.

- (1) For MSS activities identified in Attachment B, the following option may be used in lieu of (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.
- (2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement). If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 18. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. If there is not a connection (such as a sample, vent, or drain valve) available from which a representative sample may be obtained, a sample may be taken upon entry into the system after degassing has been completed. The sample shall be taken from inside the vessel so as to minimize any air or dilution from the entry point. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. Documented site procedures used to de-inventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

- (1) It is not technically practicable to depressurize or degas, as applicable, into the process.
- (2) There is not an available connection to a plant control system (flare).
- (3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

All instances of venting directly to atmosphere per Special Condition 17.E must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B.

18. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 14

- (1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate (RF) shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.

- (2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five-minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall be recorded and shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

- (1) The air contaminant concentration measured as defined in (3) is less than 80 percent of the range of the tube and is at least 20 percent of the maximum range of the tube.
- (2) The tube is used in accordance with the manufacturer's guidelines.
- (3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000*mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

- (1) The detector shall be calibrated within 30 days of use with a certified pentane gas standard at 25% of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
- (2) A functionality test shall be performed on each detector within 24 hours of use with a certified gas standard at 25% of the LEL for pentane. The LEL monitor shall read no lower than 90% of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.
- (3) A certified methane gas standard equivalent to 25% of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95% of that for pentane.

19. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 15

- A. Prior to initial use, identify any liquid in the truck. Record the liquid level and document the VOC partial pressure. After each liquid transfer, identify the liquid, the volume transferred, and its VOC partial pressure.
 - B. If vacuum pumps or blowers are operated when liquid is in or being transferred to the truck, the following requirements apply:
 - (1) If the VOC partial pressure of the liquid in or being transferred to the truck is greater than 0.50 psi at 95°F, the vacuum/blower exhaust shall be routed to a control device or a controlled recovery system.
 - (2) Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.
 - (3) A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.
 - (a) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a “duckbill” or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.
 - (b) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and at least every hour during each transfer shall be recorded, measured using an instrument meeting the requirements of Special Condition No17.A or 17.B.
 - C. Record the volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
 - D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.
 - E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in paragraphs A through D of this Special Condition do not apply.
20. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.
- A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled, sampled, gauged, or when removing material.
 - B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.
 - C. These requirements do not apply to vessels storing less than 450 gallons of liquid that are closed such that the vessel does not vent to atmosphere except when filling, sampling, gauging, or when removing material.

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 16

- D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. This record must be updated by the last day of the month following. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."
 - E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.
- 21. Additional occurrences of MSS activities authorized by this permit may be authorized under permit by rule only if conducted in compliance with this permit's procedures, emission controls, monitoring, and recordkeeping requirements applicable to the activity.
 - 22. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

Controlled recovery systems identified in this permit shall be directed to an operating process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

- A. The flares (EPNs 66FL1, 66FL2, 66FL3, and 66FL12) operated as required in Special Condition No. 2 in Flexible Permit 9868A.

Greenhouse Gas Emissions

- 23. Permit holders must keep records sufficient to demonstrate compliance with 30 Texas Administrative Code § 116.164. If construction, a physical change or a change in method of operation results in Prevention of Significant Deterioration (PSD) review for criteria pollutants, records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction, a physical change or a change in method of operation does not require authorization under 30 TAC §116.164(a). If there is construction, a physical change or change in the method of operation that will result in a net emission increase of 75,000 tpy or more CO_{2e} and PSD review is triggered for criteria pollutants, greenhouse gas emissions are subject to PSD review.
- 24. Monitoring, quality assurance/quality control requirements, emission calculation methodologies, record keeping, and reporting requirements related to Greenhouse Gas (GHG) emissions shall adhere to the applicable requirements in 40 CFR Part 98 and in this permit.
- 25. Permittee shall calculate the CO_{2e} emissions on a 12-month rolling basis, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1.

Special Conditions

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Page 17

26. Records of emissions of GHG, and how they were determined, in compliance with Special Condition Nos. 23, 24, and 25 must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction.

Recordkeeping

27. The records required by these special conditions shall be maintained in either hard copy or electronic format and shall be maintained for at least five years rather than the two-year period specified in General Condition No. 7. These records shall be made immediately available at the request of personnel from the TCEQ or any air pollution control agency with jurisdiction.

Date: January 21, 2021

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Attachment A
Inherently Low Emitting Activities

Activity	Emissions				
	VOC	NO _x	CO	PM	SO ₂
Replacement of analyzer filters/screens	X				
Replacement of process filters/screens	X				
Calibration of CEMS analyzers	X	X	X		
Calibration/maintenance of process instrumentation	X				
Catalyst changeout				X	
Spare pump startup	X				
Carbon canister replacement	X				
Seal inspections and other tank inspection activities	X				
Water washing empty drums, totes, and misc. small equipment	X				
Sample Purge and Discharge from Analyzers/Area Monitors	X				
Sample system purging	X				
Acid and Caustic washing	X				
Blowdowns of natural gas, liquid hydrocarbons, compressed air, and steam lines	X				
Combustion shutoff devices	X				
Insulation addition or removal	X				
Pneumatic starts on reciprocating engines, turbines, or compressors	X				
Machine blowdowns	X				
Drain equipment to controlled sewer hubs	X				
Sampling	X				
Clearing/draining of process equipment (other than vacuum trucks and frac tanks)	X				
Ultrasonic cleaning	X				

Date: January 21, 2021

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Attachment B

Routine Maintenance Activities

Piping/valve maintenance/repair
Filter/meter maintenance and replacement
Pipeline pigging
Compressor maintenance
Pump maintenance
Heat Exchanger maintenance

Date: January 21, 2021

Permit Numbers 160874, PSDTX1584, and GHGPSDTX205

Attachment C

MSS Activity Summary

Facilities	Emissions Activity	EPN
CCR and Naphtha Splitter Units	Turn around clearing (controlled)	CCR-MSS_C NS-MSS_C
CCR and Naphtha Splitter Units	Turn around clearing (uncontrolled)	CCR-MSS_U NS-MSS_U
Routine maintenance activities	See Attachment B	MISC-MSS
Inherently low emitting activities	See Attachment A	MISC-MSS

Date: January 21, 2021